## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**antifreeze**
**Article number: 22270, 22268, 05011, 01089, 31276, 77089, 80933**

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

#### 1.2.1 Relevant uses

Anti-freezing agents

#### 1.2.2 Uses advised against

For all uses not specified in SECTION 1.2.1

### 1.3 Details of the supplier of the safety data sheet

**Company**

Ferdinand Bilstein GmbH + Co. KG
Wilhelmstr. 47
58256 Ennepetal / GERMANY
Phone +49 2333 911-0
Fax +49 2333 911-444
Homepage www.febi.com
E-mail info@febi.com

**Address enquiries to**

**Technical information** info@febi.com

**Safety Data Sheet** info@febi.com

### 1.4 Emergency telephone number

**Advisory body** +49 (0)89-19240 (24h) (English)

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture [REGULATION (GB) CLP]

Acute Tox. 4: H302 Harmful if swallowed.
STOT RE 2: H373 May cause damage to organs through prolonged or repeated exposure.

### 2.2 Label elements

The product is required to be labelled in accordance with regulation CLP.

**Hazard pictograms**

**Signal word** WARNING

**Contains:** Ethylene glycol

**Hazard statements**

H302 Harmful if swallowed.
H373 May cause damage to organs through prolonged or repeated exposure.

**Precautionary statements**

P101 If medical advice is needed, have product container or label at hand.
P102 Keep out of reach of children.
P260 Do not breathe vapours.
P270 Do no eat, drink or smoke when using this product.
P301+P312 IF SWALLOWED: Call a POISON CENTER / doctor if you feel unwell.
P314 Get medical advice / attention if you feel unwell.
P501 Dispose of contents / container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

### 2.3 Other hazards

**Environmental hazards** The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

**Other hazards** Further hazards were not determined with the current level of knowledge.

## SECTION 3: Composition / Information on ingredients

### 3.1 Substances

**not applicable**

### 3.2 Mixtures

**The product is a mixture.**

| Range [%] | Substance |
|---|---|
| 90 - 95 | Ethylene glycol |
| | CAS: 107-21-1, EINECS/ELINCS: 203-473-3, EU-INDEX: 603-027-00-1, Reg-No.: 01-2119456816-28-XXXX |
| | GHS/CLP: Acute Tox. 4: H302 - STOT RE 2: H373 |
| 1 - <2,5 | Potassium 3,5,5-trimethylhexanoate |
| | CAS: 93918-10-6, EINECS/ELINCS: 299-890-3 |
| | GHS/CLP: Skin Irrit. 2: H315 - Eye Irrit. 2: H319 |
| 0,1 - <0,3 | Methyl-1H-benzotriazole |
| | CAS: 29385-43-1, EINECS/ELINCS: 249-596-6, Reg-No.: 01-2119979081-35-XXXX |
| | GHS/CLP: Acute Tox. 4: H302 - Repr. 2: H361d - Aquatic Chronic 2: H411 |

**Comment on component parts** For full text of H-statements: see SECTION 16.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

**General information** Change soaked clothing.

**Inhalation** Ensure supply of fresh air.
In the event of symptoms seek medical treatment.

**Skin contact** In case of contact with skin wash off immediately with soap and water.
Consult a doctor if skin irritation persists.

**Eye contact** In case of contact with eyes rinse thoroughly with plenty of water and seek medical advice.

**Ingestion** Consult a doctor immediately.
Rinse out mouth and give plenty of water to drink.
Do not induce vomiting.

### 4.2 Most important symptoms and effects, both acute and delayed

Tiredness
Unconsciousness
Headache
Vertigo

### 4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.
Forward this sheet to your doctor.

## SECTION 5: Fire-fighting measures

### 5.1 Extinguishing media

**Suitable extinguishing media**

Carbon dioxide.
Water spray jet.
Dry powder.
Foam.

**Extinguishing media that must not be used**

Full water jet.

### 5.2 Special hazards arising from the substance or mixture

risk of formation of toxic pyrolysis products, carbon monoxide (CO), not combusted hydrocarbons

### 5.3 Advice for firefighters

Use self-contained breathing apparatus.

Fire residues and contaminated firefighting water must be disposed of in accordance within the local regulations.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation.
High risk of slipping due to leakage/spillage of product.
Use personal protective equipment (protective gloves, safety glasses, protective clothing).

### 6.2 Environmental precautions

Prevent spread over a wide area (e.g. by containment or oil barriers).
Do not discharge into the drains/surface waters/groundwater.

### 6.3 Methods and material for containment and cleaning up

Pick up with absorbent material (e.g. sand, sawdust, universal absorbent, diatomaceous earth).
Dispose of absorbed material in accordance within the regulations.

### 6.4 Reference to other sections

See SECTION 8+13

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Provide solvent-resistant and impermeable floor.
Use solvent-resistant equipment.
Use only in well-ventilated areas.

Remove soiled or soaked clothing immediately.
Do not eat, drink or smoke when using this product.
Wash hands before breaks and after work.
Use barrier skin cream.
Contaminated work clothing should not be allowed out of the workplace.
Take off contaminated clothing and wash before reuse.

### 7.2 Conditions for safe storage, including any incompatibilities

Keep only in original container.

Do not store together with food and animal food/diet.

Protect from heat/overheating and from sun.
Keep container in a well-ventilated place.
Keep container tightly closed.

### 7.3 Specific end use(s)

See product use, SECTION 1.2

## SECTION 8: Exposure controls / personal protection

### 8.1 Control parameters

**Ingredients with occupational exposure limits to be monitored (UK)**

| Substance |
|---|
| Ethylene glycol |
| CAS: 107-21-1, EINECS/ELINCS: 203-473-3, EU-INDEX: 603-027-00-1, Reg-No.: 01-2119456816-28-XXXX |
| Long-term exposure: 20 ppm, 52 mg/m³, Vapour, particulate: 10 mg/m³ |
| Short-term exposure (15-minute): 40 ppm, 104 mg/m³ |

**Ingredients with occupational exposure limits to be monitored EU (2004/37/EG)**

| Substance / EC LIMIT VALUES |
|---|
| Ethylene glycol |
| CAS: 107-21-1, EINECS/ELINCS: 203-473-3, EU-INDEX: 603-027-00-1, Reg-No.: 01-2119456816-28-XXXX |
| Eight hours: 20 ppm, 52 mg/m³, H |
| Short-term (15-minute): 40 ppm, 104 mg/m³ |

**DNEL**

| Substance |
|---|
| Methyl-1H-benzotriazole, CAS: 29385-43-1 |
| Industrial, inhalative, Long-term - systemic effects, 21.2 mg/m³ |
| Industrial, dermal, Long-term - systemic effects, 300 µg/kg bw/day |
| general population, inhalative, Long-term - systemic effects, 350 µg/m³ |
| general population, dermal, Long-term - systemic effects, 10 µg/kg bw/day |
| general population, oral, Long-term - systemic effects, 10 µg/kg bw/day |
| Ethylene glycol, CAS: 107-21-1 |
| Industrial, inhalative, Long-term - local effects, 35 mg/m³ |
| Industrial, dermal, Long-term - systemic effects, 106 mg/m³ |
| general population, inhalative, Long-term - local effects, 7 mg/m³ |
| general population, dermal, Long-term - systemic effects, 53 mg/m³ |

**PNEC**

| Substance |
|---|
| Methyl-1H-benzotriazole, CAS: 29385-43-1 |
| freshwater, 8 µg/L |
| seawater, 20 µg/L |
| sewage treatment plants (STP), 39.4 mg/L |
| sediment (freshwater), 117 µg/kg sediment dw |
| sediment (seawater), 292 µg/kg sediment dw |
| soil, 18.7 µg/kg soil dw |
| Ethylene glycol, CAS: 107-21-1 |
| sediment (seawater), 3,7 mg/kg |
| sewage treatment plants (STP), 199,5 mg/l (AF=10) |
| soil, 1,53 mg/kg |
| sediment (freshwater), 37 mg/kg |
| seawater, 1 mg/L |
| freshwater, 10 mg/L |

### 8.2 Exposure controls

| | |
|---|---|
| **Additional advice on system design** | Ensure adequate ventilation on workstation.<br>Measurement methods for taking workplace measurements must meet the performance requirements of DIN EN 482. For example, recommendations are given in the IFA's list of hazardous substances. |
| **Eye protection** | Safety glasses. (EN 166:2001) |
| **Hand protection** | The details concerned are recommendations. Please contact the glove supplier for further information.<br>0,45 mm Nitrile rubber, >480 min (EN 374-1/-2/-3). |
| **Skin protection** | Protective clothing (EN 340) |
| **Other** | Personal protective equipment should be selected specifically for the working place, depending on concentration and quantity handled. The resistance of this equipment to chemicals should be ascertained with the respective supplier.<br>Avoid contact with eyes and skin. |
| **Respiratory protection** | In the event of occupational exposure limits being exceeded or of inadequate ventilation: wear appropriate respiratory protection.<br>Short term: filter apparatus, combination filter A-P2. (DIN EN 14387) |
| **Thermal hazards** | none |
| **Delimitation and monitoring of the environmental exposition** | Comply with applicable environmental regulations limiting discharge to air, water and soil. |

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | liquid |
| **Form** | liquid |
| **Color** | dark blue |
| **Odor** | odourless |
| **Odour threshold** | not relevant |
| **pH-value** | ca. 7,5 - 8,5 |
| **pH-value [1%]** | No information available. |
| **Boiling point or initial boiling point and boiling range [°C]** | No information available. |
| **Flash point [°C]** | >100 (DIN 51758) |
| **Flammability** | No information available. |
| **Lower explosion limit** | No information available. |
| **Upper explosion limit** | No information available. |
| **Oxidising properties** | no |
| **Vapour pressure/gas pressure [kPa]** | <0,01 kPa (20°C) |
| **Density [g/cm³]** | ca. 1,12 (DIN 51 757) (20 °C / 68,0 °F) |
| **Relative density** | not determined |
| **Bulk density [kg/m³]** | not applicable |
| **Solubility in water** | miscible |
| **Solubility other solvents** | No information available. |
| **Partition coefficient n-octanol/water (log value)** | No information available. |
| **Kinematic viscosity** | No information available. |
| **Relative vapour density** | No information available. |
| **Melting point [°C]** | No information available. |
| **Auto-ignition temperature [°C]** | No information available. |
| **Decomposition temperature [°C]** | No information available. |
| **Particle characteristics** | No information available. |

### 9.2 Other information

Pour point: ~-38 (50% in H2O) °C

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No dangerous reactions known if used as directed.

### 10.2 Chemical stability

Stable under normal ambient conditions (ambient temperature).

### 10.3 Possibility of hazardous reactions

Reactions with acids, alkalies and oxidizing agents.

### 10.4 Conditions to avoid

See SECTION 7.2.

### 10.5 Incompatible materials

Oxidizing agent
Acids

### 10.6 Hazardous decomposition products

No hazardous decomposition products known.

## SECTION 11: Toxicological information

### 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

**Acute oral toxicity** Based on the available information, the classification criteria are fulfilled.

| Product |
|---|
| ATE-mix, oral, 538,70 mg/kg bw |

| Substance |
|---|
| Methyl-1H-benzotriazole, CAS: 29385-43-1 |
| LD50, oral, Rat, 720 mg/kg (Lit.) |
| NOAEL, oral, Rat, 150 mg/kg bw/day |
| Ethylene glycol, CAS: 107-21-1 |
| LD50, oral, Rat, 7712 mg/kg bw |
| ATE, oral, 500 mg/kg (Acute Tox. 4) |

**Acute dermal toxicity** Based on the available information, the classification criteria are not fulfilled.

| Product |
|---|
| ATE-mix, dermal, >2000 mg/kg bw |

| Substance |
|---|
| Methyl-1H-benzotriazole, CAS: 29385-43-1 |
| LD50, dermal, Rat, > 2000 mg/kg |
| Ethylene glycol, CAS: 107-21-1 |
| LD50, dermal, mouse, > 3500 mg/kg bw |

**Acute inhalational toxicity** Based on the available information, the classification criteria are not fulfilled.

| Product |
|---|
| ATE-mix, inhalative, >20 mg/L |

| Substance |
|---|
| Ethylene glycol, CAS: 107-21-1 |
| LC50, inhalative, Rat, > 2,5 mg/L air, 6h |

**Serious eye damage/irritation** Based on the available information, the classification criteria are not fulfilled.

| Substance |
|---|
| Ethylene glycol, CAS: 107-21-1 |
| Eye, Rabbit, In vivo study, non-irritating |

**Skin corrosion/irritation** Based on the available information, the classification criteria are not fulfilled.

| Substance |
|---|
| Ethylene glycol, CAS: 107-21-1 |
| dermal, Rabbit, In vivo study, non-irritating |

**Respiratory or skin sensitisation** Based on the available information, the classification criteria are not fulfilled.

| Substance |
|---|
| Ethylene glycol, CAS: 107-21-1 |
| dermal, Guinea pig, In vivo study, non-sensitizing |

**Specific target organ toxicity — single exposure** Based on the available information, the classification criteria are not fulfilled.

**Specific target organ toxicity — repeated exposure** May cause damage to organs through prolonged or repeated exposure.

| Substance |
|---|
| Ethylene glycol, CAS: 107-21-1 |
| NOAEL, dermal, Dog, 2200 mg/kg bw/day, adverse effect observed |
| NOEL, oral, Rat, 150 mg/kg bw/day, OECD 408, adverse effect observed |

**Mutagenicity** Based on the available information, the classification criteria are not fulfilled.

| Substance |
|---|
| Ethylene glycol, CAS: 107-21-1 |
| in vitro, OECD 471, no adverse effect observed |

**Reproduction toxicity** Based on the available information, the classification criteria are not fulfilled.

**- Fertility**

| Substance |
|---|
| Ethylene glycol, CAS: 107-21-1 |
| NOAEL, oral, Rat, > 1000 mg/kg bw/day, no adverse effect observed |

**- Development**

| Substance |
|---|
| Ethylene glycol, CAS: 107-21-1 |
| NOAEL, oral, Rat, 500 mg/kg bw/day, no adverse effect observed |

**Carcinogenicity** Based on the available information, the classification criteria are not fulfilled.

| Substance |
|---|
| Ethylene glycol, CAS: 107-21-1 |
| NOAEL, oral, Rat, 1000 mg/kg bw/day, In vivo study, no adverse effect observed |

**Aspiration hazard** Based on the available information, the classification criteria are not fulfilled.

**General remarks**

Toxicological data of complete product are not available.

## 11.2 Information on other hazards

**11.2.1 Endocrine disrupting properties** The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

**11.2.2 Other information** none

## SECTION 12: Ecological information

### 12.1 Toxicity

| Substance |
|---|
| Methyl-1H-benzotriazole, CAS: 29385-43-1 |
| LC50, (96h), fish, 55 - 180 mg/L |
| EC50, (48h), Invertebrates, 8.58 - 15.8 mg/L |
| EC50, (72h), Algae, 29 - 75 mg/L |
| NOEC, (21d), Invertebrates, 18.4 mg/L |
| Ethylene glycol, CAS: 107-21-1 |
| LC50, (3d), fish, 72.86 g/L |
| LC50, (28d), fish, 1,5 g/L |
| EC50, (48h), Invertebrates, 100 mg/L |
| EC50, (21d), Invertebrates, 33,911 g/L |
| EC50, (4d), Invertebrates, 3,536 - 13 g/L |

### 12.2 Persistence and degradability

**Behaviour in environment compartments**

**Behaviour in sewage plant**

**Biological degradability** No information available.

### 12.3 Bioaccumulative potential

Product has having no bioaccumulation potential.

### 12.4 Mobility in soil

The product is mobile in an aqueous environment.

### 12.5 Results of PBT and vPvB assessment

Does not contain a relevant substance that meets the classification criteria.

### 12.6 Endocrine disrupting properties

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

### 12.7 Other adverse effects

Ecological data of complete product are not available.
Do not discharge product unmonitored into the environment or into the drainage.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. It is not possible to determine a waste code for this product in accordance with the European Waste Catalogue (EWC) since it is only possible to classify it according to how it is used by the customer. The waste code is to be determined within the EU in liaison with the waste-disposal operator.

**Product**

Dispose of as hazardous waste.
Disposal in an incineration plant in accordance with the regulations of the local authorities.

**Waste no. (recommended)** 160114*

**Contaminated packaging**

Uncontaminated packaging may be taken for recycling.

**Waste no. (recommended)** 150110* packaging containing residues of or contaminated by hazardous substances

## SECTION 14: Transport information

### 14.1 UN number or ID number

**Transport by land according to ADR/RID** not applicable

**Inland navigation (ADN)** not applicable

**Marine transport in accordance with IMDG** not applicable

**Air transport in accordance with IATA** not applicable

### 14.2 UN proper shipping name

**Transport by land according to ADR/RID** NO DANGEROUS GOODS

**Inland navigation (ADN)** NO DANGEROUS GOODS

**Marine transport in accordance with IMDG** NOT CLASSIFIED AS "DANGEROUS GOODS"

**Air transport in accordance with IATA** NOT CLASSIFIED AS "DANGEROUS GOODS"

### 14.3 Transport hazard class(es)

**Transport by land according to ADR/RID** not applicable

**Inland navigation (ADN)** not applicable

**Marine transport in accordance with IMDG** not applicable

**Air transport in accordance with IATA** not applicable

### 14.4 Packing group

| | |
|---|---|
| **Transport by land according to ADR/RID** | not applicable |
| **Inland navigation (ADN)** | not applicable |
| **Marine transport in accordance with IMDG** | not applicable |
| **Air transport in accordance with IATA** | not applicable |

### 14.5 Environmental hazards

| | |
|---|---|
| **Transport by land according to ADR/RID** | no |
| **Inland navigation (ADN)** | no |
| **Marine transport in accordance with IMDG** | no |
| **Air transport in accordance with IATA** | no |

### 14.6 Special precautions for user

Relevant information under SECTION 6 to 8.

### 14.7 Maritime transport in bulk according to IMO instruments

not applicable

## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

| | |
|---|---|
| **EEC-REGULATIONS** | 2008/98/EG (2000/532/EC ); 2010/75/EU; 2004/42/EG; (EG) 648/2004; (EC) 1907/2006 (REACH); (EU) 1272/2008; 75/324/EWG ((EC) 2016/2037); (EU) 2020/878; (EU) 2016/131; (EU) 517/2014; (EU) 2019/1148; (EU) 2019/1021, (EU) 2023/707 |
| **- Comment on component parts** | Substances of Very High Concern - SVHC: substances are not contained or are below 0.1%. |
| **- Annex XIV (REACH)** | According to Annex XIV of Regulation (EC) 1907/2006 (REACH) the product does not contain any substances ≥ 0.1% that are subject to authorisation. |
| **- Annex XVII (REACH)** | According to Annex XVII of Regulation (EC) 1907/2006 (REACH) the product contains ≥ 0.1% of substances with the following restrictions. 75<br>According to Annex XVII of Regulation (EC) 1907/2006 (REACH) the product is subject to the following restrictions.<br>3 |
| **TRANSPORT-REGULATIONS** | ADR (2023); IMDG-Code (2023, 41. Amdt.); IATA-DGR (2024) |
| **NATIONAL REGULATIONS (UK):** | EH40/2005 Workplace exposure limits (Second edition, published December 2011); UK REACH; GB CLP. |
| **- Observe employment restrictions for people** | Observe employment restrictions for young people. |
| **- VOC (2010/75/CE)** | 0 % |

### 15.2 Chemical safety assessment

For this product a chemical safety assessment has not been carried out.

## SECTION 16: Other information

### 16.1 Hazard statements (SECTION 3)

H411 Toxic to aquatic life with long lasting effects.
H361d Suspected of damaging the unborn child.
H319 Causes serious eye irritation.
H315 Causes skin irritation.

H373 May cause damage to organs through prolonged or repeated exposure.
H302 Harmful if swallowed.

### 16.2 Abbreviations and acronyms:

ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route
RID = Règlement concernant le transport international ferroviaire de marchandises dangereuses
ADN = Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure
ATE = acute toxicity estimate
CAS = Chemical Abstracts Service
CLP = Classification, Labelling and Packaging
DMEL = Derived Minimum Effect Level
DNEL = Derived No Effect Level
EC50 = Median effective concentration
ECB = European Chemicals Bureau
EEC = European Economic Community
EINECS = European Inventory of Existing Commercial Chemical Substances
EL50 = Median effective loading
ELINCS = European List of Notified Chemical Substances
EmS = Emergency Schedules
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC-Code = International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
IC50 = Inhibition concentration, 50%
IMDG = International Maritime Code for Dangerous Goods
IUCLID = International Uniform ChemicaL Information Database
IVIS = In vitro irritation score
LC50 = Lethal concentration, 50%
LD50 = Median lethal dose
LC0 = lethal concentration, 0%
LOAEL = lowest-observed-adverse-effect level
LL50 = Median lethal loading
LQ = Limited Quantities
MARPOL = International Convention for the Prevention of Marine Pollution from Ships
NOAEL = No Observed Adverse Effect Level
NOEC = No Observed Effect Concentration
PBT = Persistent, Bioaccumulative and Toxic substance
PNEC = Predicted No-Effect Concentration
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals
STP = Sewage Treatment Plant
TLV®/TWA = Threshold limit value – time-weighted average
TLV®STEL = Threshold limit value – short-time exposure limit
VOC = Volatile Organic Compounds
vPvB = very Persistent and very Bioaccumulative

### 16.3 Other information

**Classification procedure**

Acute Tox. 4: H302 Harmful if swallowed. (Calculation method)
STOT RE 2: H373 May cause damage to organs through prolonged or repeated exposure. (Calculation method)

**Modified position**

1.3, 2.3, 3.2, 8.1, 8.2, 9.1, 9.2, 11.1, 11.2, 12.1, 12.2, 12.3, 12.4, 12.5, 12.6, 12.7, 13.1, 15.1, 15.2, 16.2, 16.3